

#### **AMENDMENTS TO THE DRAWINGS:**

Applicant(s) submit(s) herewith four (4) sheets of new/replacement drawings, including Figs. 1, 1A, 2, 3, 3A, 4, 5 and 5A. The amendments to the drawings are as follows:

Figures 1, 3 and 5 have been amended to illustrate the sealing ring 18 in plastic cross-hatching and to correct typographical errors concerning certain of the reference numbers, including changing reference number 20 in Fig. 1 to number 18, adding reference number 18 and a corresponding lead line in Figs. 1, 3 and 5.

New Fig. 1A has been added to more clearly show the throttling clearance (i.e., a narrow clearance as a clearance seal or restricted section) between guide surface 20A and outer wall section 12A when the valve 10 is in the closed position of Fig. 1.

New Fig. 3A has been added to more clearly show the throttling clearance (i.e., a narrow clearance as a clearance seal or a restricted section) between guide surface 20A and outer wall section 12A when the valve 10 is in the intermediate position.

New Fig. 5A has been added to more clearly show the throttling clearance (i.e., a narrow clearance as a clearance seal or a restricted section) between guide surface 20A and outer wall section 12A when the valve 10 is in the opening position.

No new matter is believed to be added by these amendments, including the new drawings.

### **REMARKS**

The Examiner's communication dated February 11, 2008 has been received and carefully considered. In conformance with the applicable statutory requirements, this paper constitutes a complete reply and/or a bona fide attempt to advance the application to allowance. Specifically, claims 1, 8, and 16 have been amended and the formal objections/rejections dealt with. In addition, detailed arguments in support of patentability are presented. Reexamination and/or reconsideration of the application as amended are respectfully requested.

### **Summary of the Office Action**

The drawings were objected to under 37 CFR 1.83(a).

The abstract of the disclosure was objected to due to minor informalities.

Claims 1 was objected to due to minor informalities.

Claims 2-16 stand rejected under 35 U.S.C. § 112, second paragraph.

Claims 1-6, 8-19 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobow et al. (DE 19708741A1) in view of Frantz (U.S. Patent No. 2,705,020).

Claims 7 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobow et al. and Frantz and further in view of Dettmers (DE 10047073 C1).

### **Drawings**

As suggested by the Examiner, the drawings have been amended and supplemented to overcome the Examiner's objection to the drawings indicating that the drawings must show every feature of the invention specified in the claims. Particularly, the drawings have been amended to show the sealing ring 18 in the appropriate cross section for a plastic material. In addition, new figures 1A, 3A and 5A have been added to specifically illustrate the throttling clearance. Also, amendments to the drawings (and the specification) have been made to properly associate reference numeral 18 with only the sealing ring and reference numeral 20 with only the retention ring. Finally, claim 17 has been cancelled. No new matter is added as a result of these drawing amendments.

### **Specification**

The Abstract of the Disclosure has been amended to remove the numerical indicators to overcome the objection by the Examiner concerning the lack of parenthesis around the previously included numerical indicators. Also, typographical errors in the specification are corrected and appropriate references to the new drawings are provided. No new matter is added as a result of these specification amendments.

### **Claim Objections**

Claim 1 has been amended, specifically replacing "hydraulical" with "--hydraulically--". Accordingly, it is believed that the objection to claim 1 should be withdrawn.

Concerning claim 16, the Examiner objected to this claim and indicated that it was in improper form because "a multiple dependent claim cannot depend from any other multiple dependent claim." It is believed that the Examiner was in error. While claim 16 was previously presented in multiple dependent form, that claim did not depend from any other claim presented in multiple dependent form. That is, claim 16 was recited as being dependent from one of claims 2-15, none of which was in multiple dependent form. Nonetheless, Applicant has amended claim 16 to remove the multiple dependent format therefrom. Accordingly, the objection to claim 16 should be withdrawn.

### **35 U.S.C. § 112, Second Paragraph**

The Examiner rejected claims 2-16 under 35 U.S.C. § 112, second paragraph. Particularly, the Examiner asserted that these claims were rejected for being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. However, the Examiner provided specific rejections only against claims 2 and 4. The remaining claims, excepting dependent claims 3 and possibly 16, did not depend from either of claims 2 or 4. Thus, it is unclear why the Examiner rejected these other claims under 35 U.S.C. § 112, second paragraph.

Concerning claim 2, the claim has been amended to remove "between both radial apertures" so as to overcome the rejection against this claim.

Concerning claim 4, it is unclear how this claim was indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention of claim 4. The Examiner indicated that the claim limitation "the throttling clearance, if the control piston is positioned in the intermediate position, with contact..." is unclear as to what is being claimed relative to the throttling clearance. The claim clearly indicated that the throttling clearance forms a restricted fluid connection between the load port and the return port if the control piston is positioned in the intermediate position with contact between the valve piston with the sealing seat. Nonetheless, in the hope of further clarifying what is being claimed in dependent claim 4, Applicant has amended claim 4 to replace "if" with --when-- and has removed the first occurrence of a comma in line 3 of claim 4. The claim now specifies that the throttling clearance forms a restricted fluid connection between the load port and the return port when the control piston is positioned in the intermediate position with contact between the valve piston and the sealing seat (see new Fig. 3A).

For all the foregoing reasons, it is respectfully submitted that the § 112 rejections against the pending claims be withdrawn.

**The Claims Distinguish Patentably  
Over the Reference(s) of Record**

**Claim 1** calls for the recited piston chamber to comprise a second radial aperture that is displaced towards the recited end face relative to the recited first radial aperture. Moreover, claim 1 recites that the first radial aperture can be closed by a control piston with the arrival of the control piston at an intermediate position, which is between an initial position and an end position.

As indicated in an earlier section, the Examiner has rejected claim 1 as being unpatentable over Kobow et al. in view of Frantz. The Examiner concedes that Kobow et al. fails to disclose all of the recited limitations of claim 1 and thus attempts to add Frantz to Kobow et al. to reject claim 1 as being obvious. There are two primary problems with the Examiner's rejection of claim 1. First, the combination of Frantz and Kobow et al. fail to together teach or fairly suggest all the recited limitations of claim 1. Second, the Examiner has not provided an adequate reason as to why one of ordinary

skill in the art would employ the second radial aperture of Frantz into the valve of Kobow et al., or otherwise combine the teachings of Frantz with the teachings of Kobow et al.

Taken together, it is unclear how the combination of Frantz with Kobow et al. would provide a second radial aperture *displaced towards an end face relative to a first radial aperture* nor is it clear how the first radial aperture of a pair of radial apertures is closed by a control piston with the arrival of a control piston at an intermediate position between an initial position and an end position. Simply put, even if one of ordinary skill in the art were to take the second radial aperture of Frantz and add it to the arrangement disclosed in Kobow et al., there is absolutely no support to show that one of ordinary skill in the art would add the second aperture in the position required by claim 1 (i.e., displaced towards the end face relative to the first aperture). In particular, adding a second aperture to the valve arrangement of Kobow et al. would not create a working valve arrangement.

More egregious, there is no disclosure or fair suggestion in the combination of Kobow et al. and Frantz of a first radial aperture being closed by a control piston with the arrival of the control piston at an intermediate position between an initial position and an end position. If radial aperture 23 of Kobow et al. is taken as the first aperture, which would be required if Frantz is being relied upon to provide the second aperture, the control piston 16 would not close the aperture 23 when in some intermediate position between its initial position and its end position. Rather, the control piston 16 appears to block outlet 22 and allow communication from port A to port P when surface ring 10 is separated from seal seat ring 11 *via aperture 23*. In other words, fluid communication through aperture 23 appears to occur regardless of the position of the control piston 16, and certainly does not appear to be affected by the control piston 16 being in some intermediate position between an initial position and an end position.

In addition, Applicant respectfully submits that the Examiner's reasoning for combining the teachings of Frantz with Kobow et al. is entirely inadequate. The Examiner's provided reasoning allegedly showing that it would be obvious to one of ordinary skill in the art to employ the second radial aperture of Frantz into the valve of Kobow et al. is to have:

the valve piston comprises a second radial aperture, displaced towards the end face relative to the first radial aperture, and wherein the valve piston is guided between both radial apertures in a valve piston sliding guide with the formation of a throttling clearance, and where the second radial aperture completely unblocks the fluid connection between the high pressure port and the load port and the cone face ring being located on the high pressure side of the second radial aperture and the second radial aperture are configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other, and wherein the second radial aperture, as a function of the location of the valve piston, lies opposite to the valve piston sliding guide or lies on the high pressure side of the valve piston sliding guide in order to provide a conduit between the outlet line and the upper chamber through which any air in the outlet line is bled quickly (Col. 3, Lns. 24-30).

*See Office Action at pages 7 and 8.* Rather than articulated reasoning supporting a combination of references, this reasoning appears to be a conglomeration of Applicant's claims (copied nearly verbatim) and the cited section of Frantz.

Applicant respectfully asserts that the Examiner has not provided a sufficient reason or explicit analysis of why the disclosures of the references of Kobow et al. and Frantz should be combined (i.e., the foregoing quoted paragraph is insufficient). Instead, the combination applied against claim 1 appears to be a classic case of hindsight reasoning. There is simply no suggestion to combine the teachings and suggestions of Kobow et al. and Frantz as advanced by the Examiner, except from using Applicant's invention of claim 1 as a template to read hindsight reconstruction of claim 1. As KSR made clear, rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. In other words, a combination or modification is not obvious simply because the Examiner says it is so.

Moreover, Frantz is a bleed valve, having bleed ports being openable to the environment. The invention of claim 1 is instead directed to a hydraulic switch valve for underground shield supports and thus is operated on totally different pressure levels. One of ordinary skill in the art would not know how to use any of the features disclosed

in Frantz on the valve as shown in Kobow in order to achieved the improvement of the invention of claim 1.

For at least the foregoing reasons, Applicant respectfully submits that claim 1 and claims 2-16 and 18-21 dependent therefrom are in condition for allowance.

Dependent **claim 2**, as amended, calls for the valve piston to be guided in a valve piston sliding guide with the formation of a throttling clearance. In the verbatim copying of the claims, as discussed above, the Examiner somehow indicates that Kobow et al. discloses such a throttling clearance, though the Examiner has not provided any specific indication as to where in Kobow et al. such a teaching occurs. It is respectfully submitted that the Examiner is misguided and that no such throttling clearance appears in Kobow et al.

Dependent **claim 3** calls for the recited second radial aperture to lie opposite to the valve piston sliding guide or lie on a high pressure side of the valve piston sliding guide, as a function of the location of the valve piston. Even if the second aperture of Frantz were somehow applied to the valve of Kobow et al., there is no disclosure or fair suggestion of such an aperture lying opposite to a valve piston sliding guide or lying on a high pressure side of a valve piston sliding guide, as a function of the location of the valve piston.

Dependent **claim 4** calls for the throttling clearance to form a restricted fluid connection between the load port and the return port when the controlled piston is positioned in the intermediate position with contact between the valve piston and the sealing seat, and with an opened sealing seat forms a restrictive fluid connection between the high pressure port and the return port. Again, the Examiner has not indicated where such a teaching occurs in Kobow et al., other than to state in conclusory fashion (i.e., by copying the claim language verbatim into the Office Action) that such a teaching is provided in Kobow et al.

Dependent **claim 5** calls for the second radial aperture to completely unblock the fluid connection between the high pressure port and the load port. The Examiner has provided no specifics or analysis as to how a second radial aperture from Frantz applied to the valve of Kobow et al. would somehow completely unblock a fluid connection between the high pressure port and the load port.

Dependent **claim 8** calls for a cone face ring to be located on a high pressure side of a second radial aperture. Even if the second aperture of Frantz were somehow incorporated into the valve of Kobow et al., the Examiner has not provided any specifics or analysis as to how the recited cone face ring of dependent claim 10 being located on a high pressure side of the second radial aperture would be supported by the combination of Kobow et al. and Frantz.

Dependent **claim 12** calls for the control piston to comprise a control piston shaft, that in the intermediate and end positions of the control piston overlaps the first radial aperture so as to sealedly overlap it or overlap the latter while leaving a throttle clearance. There is no disclosure of a control piston overlapping a first radial aperture in Kobow et al. so as to sealedly overlap it, nor any disclosure of a control piston overlapping a first radial aperture while leaving a throttle clearance.

Dependent **claim 16** calls for the sealing ring to be manufactured from a plastic and the retention ring to be manufactured from a steel. The Examiner does not appear to have addressed this claim.

Dependent **claim 21** calls for the valve piston to comprise on its closed face opposite to the open end face a connecting thread for connection of a disassembly tool. It appears that the Examiner has also failed to address this claim.

Dependent **claims 7 and 20** are rejected over the triple combination of Kobow et al., Frantz and Dettmers. The Examiner indicates that it would have been obvious to one of ordinary skill in the art to employ the alleged flange of Dettmers onto the valve of Kobow et al. and Frantz "in order to create an abutment surface to the piston to ensure movement of the piston during control pressure cycle." Again, this appears to be hindsight reasoning. As *KSR* clearly indicates, "a fact finder should be aware, of course, of the distortion caused by hindsight biased and must be cautious of argument relying upon ex post reasoning." While motivation may not still be required for an obviousness rejection, the Examiner is required to articulate reasoning with some rational underpinning. A combination or a modification is not obvious simply because the Examiner concludes it is so. Indicating that it would be obvious to modify a combination with an additional reference in order to create an abutment surface to the



piston to ensure movement of the piston during the control pressure cycle is entirely conclusory and is not articulated reasoning with a rational underpinning.

### CONCLUSION

All formal and informal matters having been addressed, it is respectfully submitted that this application is in condition for allowance. It is believed that the claim changes and/or arguments supporting patentability clearly place the application in condition for allowance, defining over any fair teaching attributable to the references of record. Alternatively, if the Examiner is of the view that the application is not in clear condition for allowance, it is requested that the Examiner telephone the undersigned for purposes of conducting a telephone interview to resolve any outstanding differences. Accordingly, an early notice of allowance is earnestly solicited.

Respectfully submitted,

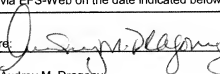
FAY SHARPE LLP



Erik J. Overberger, Reg. No. 48,556  
1100 Superior Avenue, Seventh Floor  
Cleveland, OH 44114-2579  
216-861-5582

May 9, 2008

Date

CERTIFICATE OF MAILING OR TRANSMISSION	
I hereby certify that this correspondence (and any item referred to herein as being attached or enclosed) is (are) being	
<input type="checkbox"/> deposited with the United States Postal Service as First Class Mail, addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.	
<input checked="" type="checkbox"/> transmitted to the USPTO by electronic transmission via EFS-Web on the date indicated below.	
Express Mail Label No.:	Signature: 
Date: May 9, 2008	Name: Audrey M. Dragon

N:\SHEE\200058\AMD0008755V001.docx